

Interference: Defining the Source

FCC Consumer Facts

Background

Interference is any unwanted radio frequency signal that prevents you from watching television, listening to your radio or stereo, or talking on your cordless telephone. Interference may prevent reception altogether, may cause only a temporary loss of a signal, or may affect the quality of the sound or picture produced by your equipment.

Common Causes

Before you can resolve an interference problem you must isolate the actual interference source. Interference originates from many sources - the equipment itself, your residence, or the neighborhood.

The two most common causes of interference are transmitters and electrical equipment. Communication systems that transmit signals (transmitters) are capable of generating interference; these include amateur radios, CBs, and radio and television stations. Electrical interference may be caused by power lines or electrical equipment in your home.

Transmitter Interference

Transmitter interference is normally caused by the actual design of the (interfered-with) equipment itself. Many manufacturers do not protect internal wiring with adequate shielding or sufficient filtering, so the interfered-with equipment is susceptible to receiving unwanted signals – interference.

The source may be as simple as a frayed wire that connects your speakers to an amplifier. A faulty wire can act as an antenna that will carry interfering signals. Check the incoming wire from your outside antenna for any damage or corrosion. Replace any twin-lead cable with a coaxial cable; a coaxial cable offers the best protection from all types of outside interference.

To determine whether the interference is coming from the interfered-with equipment itself, unplug one component at a time on the interfered-with equipment or on other equipment to see if you can isolate the source. Also, disconnect other electrical equipment (answering machines, telephones, fax machines, etc.) one by one. If the problem goes away when the device is disconnected, you have found the source – the device itself.

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If your equipment is reacting to transmitters such as an amateur radio or CB, you will have interference only when the radio operator is talking; you will be able to hear only half of the conversation. This type of interference is normally intermittent during specific times of the day. You will probably be able to verify your conclusion if you see an antenna mounted on a nearby house or car. Stereos, electronic organs, home intercom systems and other devices can react to nearby radio transmitters and will function as radio receivers. Cordless telephones use radio frequencies and have no protection from interference. If you are experiencing interference on your cordless phone, you should contact the manufacturer for assistance.

Electrical Interference

Electrical interference appears on the audio and video portion of television programming. There are various patterns; the entire screen may be covered with rolling horizontal lines, bars on the TV screen or a series of diagonal dashed white lines. Short bursts of interference may be caused by hair dryers, sewing machines, electric drills, doorbell transformers and garage door openers. If the pattern is on continuously, it may be caused by equipment that is in use full time, such as aquarium heaters and fluorescent lighting. Interference caused by your power company's electrical equipment is normally continuous and your power company should be notified.

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A simple method of determining the location of electrical interference is by using a portable AM radio tuned to a quiet frequency at the lower end of the dial. If you hear static or a buzzing sound, check to see if it corresponds with the interference to your equipment. The closer you get to the source of the interference, the more intense the static will be.

If you cannot locate the interference source in your own house, check with your neighbors to see if they also receive interference. The house that has the worst interference will often be the source of the interference.

If you can determine that the electrical interference is not caused by any device in your home or a neighbor's home served by the same transformer, contact the customer service department of your local power company. Most power companies will investigate the problem and take steps to correct it.

The manufacturer of your home electronics equipment is in the best position to offer assistance in resolving your interference problems. You can usually find information about the manufacturer of your equipment on the Internet. The dealer who sold you the equipment should also be able to provide contact information for the manufacturer.

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